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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,970	09/18/2003	Mani Soma	4735.P005	8349

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EXAMINER

BUL, BRYAN

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,970

Applicant(s)

SOMA ET AL.

Examiner

Bryan Bui

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-8 and 11-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 11-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/24/06</u> . | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> . |

Continuation of Attachment(s) 6). Other: ref wavelet wikipedia in record.

1. Applicants' papers filed on 4/24/2006 request for RCE has been received and entered. Claims 1, 5-6, 23, and 29 have been amended. Claims 2-4, and 9-10 have been cancelled. Claims 39-40 have been added. Claims 1, 5-8, 11-40 are pending in the application.
2. Applicants' remarks have been considered, but it is moot in view of the new ground of the rejections.
3. IDS submitted on 4/24/2006 has been received and considered.

Claim Objections

4. Claim 40 is objected to because of the following informalities: claim 40 cannot depend on claim 41. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 5-8, 11-22, and 29-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a

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starting point for future investigation or research (Brenner v. Manson, 383 U.S.519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993).

Signals per se are not statutory subject matter, have no tangible physical structure, and do not perform any useful, concrete, and tangible result.

A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459. Nor can one patent "a novel and useful mathematical formula," Flook, 437 U.S. at 585, 198 USPQ at 195; electromagnetism or steam power, O'Reilly v. Morse, 56 U.S. (15 How.) 62, 113-114 (1853). **To view the new guidelines for 35 U.S.C. 101, please view the following OG notice.**

<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>

With respect to claim 1, the method/article of manufacture machine operation does not produce a tangible result. It is unclear how the result is being stored, displayed, or used in any tangible manner.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5-8, 23, and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by McCorkle (US 6937646).

With respect to claims 1, 23, and 29, McCorkle teach the features of the claimed invention in figures 6, 8, 16, and column 6, lines 19-30 comprises wavelet generator to generating wavelet applying to radio frequency (RF) transmitted from radio source and through band-pass filter to extract the timing parameter in form of time-frequency representation, wherein the timing parameter includes a clock period of the RF signal.

With respect to claims 5-6, 30, McCorkle teach extracting rise time/fall time for the RF signal (figures 4A, 4B).

With respect to claims 7-8, 31, McCorkle teach extracting at least one frequency (parameter) increase from RF signal (figure 12).

With respect to claim 32, McCorkle teach McCorkle teach wavelet generator is coupled to extract the phase characteristics from the RF signal (figure 6) for extracting the phase characteristic from the RF signal to provide the shapes and positions correlated to the sequence of the wavelets of particular shapes and position of the RF signal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 5-8, 23, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tekinay (US6175811) in view of McCorkle (US 6937646).

With respect claims 1, 23, 29, Tekinay discloses the claimed invention in figures 7, 9, abstract, and column 12, lines 25-38, comprising: applying a wavelet (wavelet representation) to radio frequency signal under test; extracting parameters (defining the amount of multipath components that signal were to travel in a region of RF) from the RF signal using a wavelet transform of the RF signal. Tekinay further discloses in figures 3-4 and column 9, lines 6-47, column 9, lines 1-12, column 12, lines 25-30, for extracting at least one timing parameter from the RF signal. Tekinay et al do not disclose timing parameter includes a clock period of the RF signal. McCorkle teach timing parameter includes a clock period (figure 8, T_s , clock period of the wavelet of signal RF. It would have been obvious to one of ordinary skill in the art to modify the teachings of Tekinay to includes a clock period of the RF signal as taught by McCorkle in figure 8 to identify the parameter corresponding of the wavelet in RF signal (column 6, lines 19-30).

With respect to claims 5-8, 30-32 Tekinay further discloses in figures 3-4 and column 9, lines 6-47, column 9, lines 1-12, column 12, lines 25-30, for rise time and fall time for RF signal; extracting at least one frequency parameter, a frequency increase from the RF signal, phase (shape) from RF signal (noted that the wavelets are localized in both time and frequency as inherently known in the art that define time to frequency is

represented in wavelet transform). Tekinay et al do not teach extracting at least one phase parameter from the RF signal. McCokle teach wavelet generator is coupled to extract the phase characteristics from the RF signal (figure 6). It would have been obvious to one of ordinary skill in the art to modify the teachings of Tekinay to include the wavelet tool (wavelet generator) as taught by McCokle for extracting the phase characteristic from the RF signal to provide the shapes and positions correlated to the sequence of the wavelets of particular shapes and position of the RF signal (figure 6).

10. Claims 11, 12, 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tekinay (US 6175811) in view McCokle (6937646), and further in view of Wavelet-Wikipedia, the free encyclopedia (6 pages that disclosed in the previous office action).

With respect to claims 11, 12, 24-25, 27, 28, Tekinay and McCokle do not teach a Morlet wavelet, a Haar wavelet used in wavelet tool. It is appreciated by one skill in the art to define the wavelets could be classified into the discrete and continuous wavelets in which Haar wavelet and Morlet wavelet are commonly used in the technology by Wavelet-Wikipedia, the free encyclopedia for satisfying the respective transform for each suitable application for extracting frequency and timing characteristics.

With respect to claim 26, McCokle teach wavelet generator is coupled to extract the phase characteristics from the RF signal (figure 6). It would have been obvious to one of ordinary skill in the art to modify the teachings of Tekinay and Wavelet-Wikipedia, the free encyclopedia to include the wavelet tool (wavelet generator) as

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taught by McCorkle for extracting the phase characteristic from the RF signal to provide the shapes and positions correlated to the sequence of the wavelets of particular shapes and position of the RF signal (figure 6, column 4, lines 28-40).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Bui whose telephone number is 571-272-2271. The examiner can normally be reached on M-Th from 7am-4pm, and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Bryan Bui', with a stylized flourish at the end.

BRYAN BUI
PRIMARY EXAMINER